

SIMPLE SUSTAINABILITY FOR THE SMALL BREWER



MBAA SPRING MEETING
APRIL 26-27, 2013

Deep Thought



“If you ever reach total enlightenment while drinking beer, I bet it makes beer shoot out of your nose.”

- Jack Handy

My Journey – 18 Years of Brewing



History

- Blue Heron High
- Homebrewing at 18
- Study Abroad-Cologne
- U of O Brewing Intern
- Eugene City Brewery
- American Brewers Guild
- Bridgeport
- Old World Pub & Brewery
- Laurelwood
- Hopworks

Hopworks Urban Brewery



Founded in 2007

Currently 112 employees in three departments: Powell, Bikebar and Brewery

20 bbl, 3 vessel brewhouse

9,344 bbls in 2012,
17,000 bbl capacity

In 16 oz. cans, 22oz bottles and 50L kegs

Distributed in OR, WA, ID and BC



Subliminal Message



**DRINK
HOPWORK
S BEEF**



What is Sustainability?



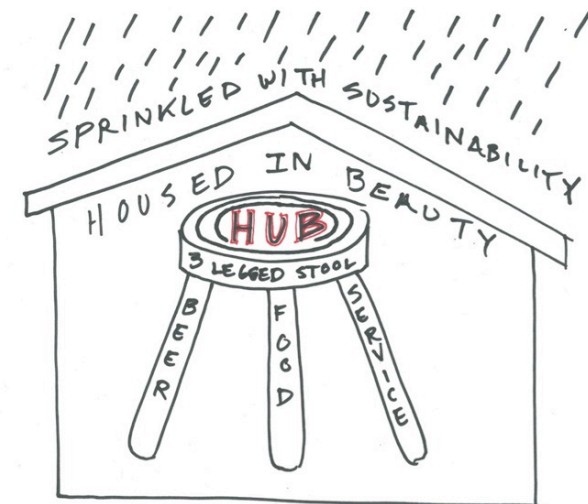
sus·tain·able *adjective*

1: capable of being sustained

2 a: of, relating to, or being a method of harvesting or using a resource so that the resource is not depleted or permanently damaged

b: of or relating to a lifestyle involving the use of sustainable methods

How HUB Defines Sustainable



Why Sustainability at HUB ?



Growing up in Oregon you develop a love for nature, beer and bikes

Turning personal Passion into a Viable Business- "Never Work a Day in Your Life"

POD-Thoughtful Alternative in a competitive environment that is delicious and meaningful

Call to Action:

"Do What You Can" Personally and Professionally to be live Sustainably

3 Revenue Centers



Hopworks Urban Brewery
- SE Powell



Hopworks BikeBar
North Williams

HUB Production Brewery

Hopworks Urban Brewery



Green Building on a Shoestring Budget

Discovering the 70% Rule

Dad was architect

I was General Contractor

Together we transformed a run-down 1948 Tractor Showroom



From This.....



Into This



Hopworks Urban Brewery



- Deconstruction
- Aggressive use or reclaimed material
- Rain capture
- Reflective roof
- Pervious pavement
- High efficiency heating/cooling/lighting
- Low flow plumbing fixtures
- Hand dryers
- Bountiful bike parking

Reclaim



Rain Capture



Not Nearly Big Enough

Pervious Pavers



Low / No Flow Fixtures



Hand Dryers



Bountiful Bike Parking



Hopworks BikeBar – The Next Level



Energy Efficient Shell

Located on Williams
“Bike Highway”

Golden Lions-Energy
Generating Plug Out
Bikes

Hopworks BikeBar



Reclaim Décor

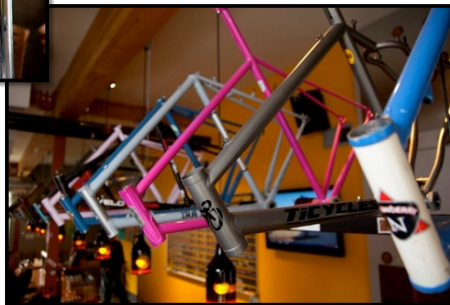
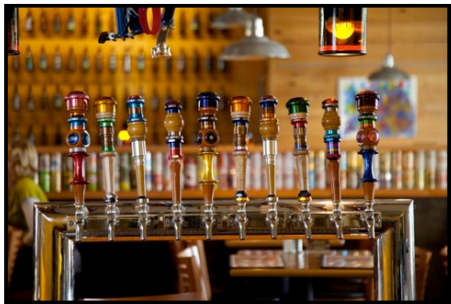
OBC Bike Canopy

Incandescent Free

State of the Art Cooler

High Efficiency Kitchen

Hopworks BikeBar



Hopworks Production Brewery



- Produce Certified Organic Beer
- Efficient Cooler
- Zero VOC Floor
- T5 and T8 Lighting
- Dual 20hp Chiller w/ heat capture, Cool Fit piping and VFD
- Unique Whirlpool
- Milk Loop

Energy Efficiency



Unique Whirlpool



Brewery - Closing the Milk Loop



Brewery Waste

Spent Grain, Yeast, Hops and Kettle Bottoms

Shipped to an Organic Dairy Farm in the Willamette Valley

Organic Milk Purchased and Served in the Two Brewpubs

Future Projects



“Incandescent Free Zone”- Powell Pub

Glycol Chiller Heat Recovery

Steam Kettle & Hot Liquor

Wastewater Treatment

Centrifuge



How Can You Do It?



Learn on the Job-DIY

Hire Contractor who "Gets It"

Enlist Energy Trust for expertise and INCENTIVES

Use Brewers Alliance Toolkit

USGBC – LEED

All of the Above



Set a Baseline - Gather Info



- Water, Electricity, Gas in a spreadsheet
- Map production to create intensity metric
- Allows for ongoing measurement and verification
- Create Sustainability Report

Powell Brewery	January	February	March
Water Usage	112,207.8	90,514.3	101,735.1
Beer Production (gals)	20,704.9	22,208.4	24,087.0
Production Intensity (gal H₂O / gal beer)	5.419	4.075	4.223
Quarterly Intensity (gal H₂O / gal beer)			4.544

Defining Better and Best



Better

Things you can do Monday



Best

Long-Term Goals



Organics



Better

One Organic Brew

Best

Go All Organic

Type	Ingredient	#	\$	Total \$	\$/ Barrel	\$/ 15.5 Keg	\$/ Pint
<u>Assumptions</u>							
20 bbl batch = 4960 Pints				1400 # Total Malt Bill			
14 Plato				1000 Barrels per Year			
2 # Hops per Barrel							
Organic	2 Row	1190	\$0.46	\$547.40			
	40 L	210	\$0.87	\$182.70			
	Hops	40	\$14.00	\$560.00			
			\$1,000.00				
	Certification	0	\$20.00	\$0			
				\$1,310.10			
Total \$ Org					0	\$65.51	\$32.75 \$0.26
Conventional	2 Row	1190	\$0.38	\$452.20			
	40 L	210	\$0.71	\$149.10			
	Hops	40	\$8.00	\$320.00			
Total \$ Conv				\$921.30			
Difference						\$46.07	\$23.03 \$0.19
						\$19.44	\$9.72 \$0.08



Zero Waste Initiative



Opportunity	Better	Best
Waste Sorting	Employee Training 2-Bin office 4-Bin production	3-Bin office 5-Bin production
Trash	Diverting non-recyclable waste to artists, schools, etc.	Don't bring it in

Employee Training is Key!



Electrical Efficiency



Opportunity	Better	Best
Space Cooling	Change filters and thermostat settings	Insulate, Install AC with high SEER rating
Refrigeration	Strip curtains, LED light	Cool Expert thermostat, Coolfit piping, Freezer box, Insulate slab, Heat capture
Compressed Air	Check for leaks	Scroll compressor with VFD, dryers on packaging line
Motors	VFD's	Properly size, Install eco-motors
Lighting	CFL's, Motion sensors	T5, T8, LED, Occupancy sensors

Fossil Fuel Reduction



Opportunity	Better	Best
Space Heating	Change filters and thermostat settings	Insulate, High-efficiency air handler and condensing furnace
Boilers/Brewhouse	Leaks, Insulation, Reduce boil times, Capture cooling water	On-Demand boiler, economizer-water preheat for domestic or feedwater use
Water Heating	Lower set point, insulate lines	Condensing heater
Kitchen Equipment	Minimize preheat, Turbo-pot	Infrared Appliances

Water Conservation



Opportunity	Better	Best
Bathrooms	Faucet aerators	Waterless urinals and low-flow toilets
Wash Down	As necessary	
Wort Cooling	Capture Preheated Water	
CIP	Downcycle-floor and parts wash	Recycle-reclaim, filter, titrate and reuse
Brewhouse	Install Flowmeter-mash and sparge	Automate
Onsite Water Capture and Reuse	Rain Barrels	Graywater diversion, pretreatment and reuse-irrigation and toilets

Wastewater Treatment



Opportunity	Better	Best
Sewage	Minimize Discharge, Separate Solids	Graywater Treatment Facility
Onsite Stormwater Retention	Disconnect Downspouts, Rain Barrels and Retention Pond	Install pervious pavers, Graywater diversion, pretreatment and



Water Deduct Report



Calculate and deduct water leaving building as:

- Finished Beer
- Kettle Evaporate
- Spent Grain Moisture

25 – 30% Reduction in Sewer Charges

Transportation



Opportunity	Better	Best
Active Transportation	Bike tax credit, Ample bike parking	Employee shower, covered bike parking
Efficient Transportation	Encourage bus/ carpool, motorcycle parking	Install EV station, underwrite employee bus passes
Delivery	Limit and consolidate trips	Purchase efficient vehicles



Offset Your Output



Carbon

2012 HUB CO₂ = 1,140.49 MT

- partially offset to 925.18 MT
via green electricity



Offsets for entire “Cradle to Gate” footprint purchased through ClearSky Climate Solutions

Water

Offsets for 2.5 million gal. = Enough to cover both restaurants and the brewery.
Purchased through Bonneville Environmental Foundation



Certifications and Awards



Independent Validation of your Efforts

Authenticates for Consumers – No “Greenwashing”

- LEED
- City & State Orgs
- Travel & Tourism
- Publications



Sustainability at Work

TRANSPORTATION
Transportation options are displayed on website for guests.
Bike parking is provided for customers.
15% of employees or more walk or bike as their primary commute.
Carbon offsets are purchased.

LEED 2009 for Existing Buildings: Operations & Maintenance
Project Checklist

Sustainable Sites				Possible Points: 26				Materials and Resources			
Y	T	M	P	Y	T	M	P	Y	T	M	P
Crack 1								Crack 6			
Crack 2								Crack 7			
Crack 3								Crack 8			
Crack 4								Crack 9			
Crack 5								Crack 10			
Crack 6								Crack 11			
Crack 7								Crack 12			
Crack 8								Crack 13			
Crack 9								Crack 14			
Crack 10								Crack 15			
Crack 11								Crack 16			
Crack 12								Crack 17			
Crack 13								Crack 18			
Crack 14								Crack 19			
Crack 15								Crack 20			
Crack 16								Crack 21			
Crack 17								Crack 22			
Crack 18								Crack 23			
Crack 19								Crack 24			
Crack 20								Crack 25			
Crack 21								Crack 26			
Crack 22								Crack 27			
Crack 23								Crack 28			
Crack 24								Crack 29			
Crack 25								Crack 30			
Crack 26								Crack 31			
Crack 27								Crack 32			
Crack 28								Crack 33			
Crack 29								Crack 34			
Crack 30								Crack 35			
Crack 31								Crack 36			
Crack 32								Crack 37			
Crack 33								Crack 38			
Crack 34								Crack 39			
Crack 35								Crack 40			
Crack 36								Crack 41			
Crack 37								Crack 42			
Crack 38								Crack 43			
Crack 39								Crack 44			
Crack 40								Crack 45			
Crack 41								Crack 46			
Crack 42								Crack 47			
Crack 43								Crack 48			
Crack 44								Crack 49			
Crack 45								Crack 50			
Crack 46								Crack 51			
Crack 47								Crack 52			
Crack 48								Crack 53			
Crack 49								Crack 54			
Crack 50								Crack 55			
Crack 51								Crack 56			
Crack 52								Crack 57			
Crack 53								Crack 58			
Crack 54								Crack 59			
Crack 55								Crack 60			
Crack 56								Crack 61			
Crack 57								Crack 62			
Crack 58								Crack 63			
Crack 59								Crack 64			
Crack 60								Crack 65			
Crack 61								Crack 66			
Crack 62								Crack 67			
Crack 63								Crack 68			
Crack 64								Crack 69			
Crack 65								Crack 70			
Crack 66								Crack 71			
Crack 67								Crack 72			
Crack 68								Crack 73			
Crack 69								Crack 74			
Crack 70								Crack 75			
Crack 71								Crack 76			
Crack 72								Crack 77			
Crack 73								Crack 78			
Crack 74								Crack 79			
Crack 75								Crack 80			
Crack 76								Crack 81			
Crack 77								Crack 82			
Crack 78								Crack 83			
Crack 79								Crack 84			
Crack 80								Crack 85			
Crack 81								Crack 86			
Crack 82								Crack 87			
Crack 83								Crack 88			
Crack 84								Crack 89			
Crack 85								Crack 90			
Crack 86								Crack 91			
Crack 87								Crack 92			
Crack 88								Crack 93			
Crack 89								Crack 94			
Crack 90								Crack 95			
Crack 91								Crack 96			
Crack 92								Crack 97			
Crack 93								Crack 98			
Crack 94								Crack 99			
Crack 95								Crack 100			

Conclusion



Why Should You Adopt Sustainable Practices?

Feels Good, Feels Right

ROI

Connects with your customers

Your Kids Will Appreciate It!

“Do What You Can”



Sustainability Is Fun!



THANK YOU



Christian Ettinger
 Christian@HopworksBeer.com
 503.232.HOPS